Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in the application.

1. (Currently amended) A method for use in quantitative analysis of a turbid, pharmaceutical sample, comprising the following steps:

a) providing an excitation beam of radiation;

b) irradiating a turbid pharmaceutical sample with the excitation beam of radiation; and

c) detecting the intensity of emitted radiation from the sample as a function of both the wavelength of the emitted radiation and the photon propagation time through the sample, **wherein the emitted radiation consists of transmitted radiation and diffusely reflected radiation**.

2-4. (Canceled)

5. (Previously presented) The method as claimed in claim 1, wherein the excitation beam is a pulsed excitation beam presenting a pulse train of excitation pulses, and wherein the step of detecting the intensity as a function of the photon propagation time is performed in time synchronism with the excitation pulses.

6. (Previously presented) The method as claimed in claim 5, wherein the excitation pulses have a pulse length shorter than the photon propagation time.

7. (Previously presented) The method as claimed in claim 6, wherein the excitation pulses have a pulse length selected short enough in relation to the photon propagation time such that any undesired interference between intensity measurements relating to two subsequent excitation pulses is prevented.

8. (Previously presented) The method as claimed in claim 1, wherein the excitation beam is an intensity modulated excitation beam.

9. (Previously presented) The method as claimed in claim 8, wherein the step of detecting the intensity as a function of the photon propagation time is performed by comparing the phase of the intensity modulated excitation beam with the phase of the emitted radiation from the sample.

10. (Previously presented) The method as claimed in claim 8, wherein the step of detecting the intensity as a function of the photon propagation time is performed by comparing the modulation depth of the intensity modulated excitation beam with the modulation depth of the emitted radiation from the sample.

11. (Currently amended) The method as claimed in any one of claims **1 or 5-10,** **[[**1-10,**]]** wherein the detection of the intensity of emitted radiation from the sample as a function of time is performed with the use of a time-resolved detection unit.

12. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the detection of the intensity of emitted radiation from the sample as a function of time is performed with the use of a phase-resolved detection unit.

13. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the detection of the intensity of emitted radiation from the sample as a function of time is performed with the use of a time-gated system.

14. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the step of detecting the intensity further comprises a spatial-resolved detection of the intensity.

15. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the turbid pharmaceutical sample is a solid sample.

16. (Previously presented) The method as claimed in claim 15, wherein the step of irradiating the sample with the excitation beam comprises the step of irradiating a first surface of the solid sample.

17. (Previously presented) The method as claimed in claim 15, wherein the step of irradiating the sample with the excitation beam comprises the step of irradiating a first surface and a second surface of the solid sample.

18. (Previously presented) The method as claimed in claim 17, wherein the first surface and the second surface of the solid sample are irradiated at different points in time.

19. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the turbid pharmaceutical sample is a dispersion.

20. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the excitation beam comprises infrared radiation.

21. (Previously presented) The method as claimed in claim 20, wherein the infrared radiation is near infrared radiation (NIR).

22. (Previously presented) The method as claimed in claim 21, wherein the radiation has a frequency in the range corresponding to wavelengths from about 700 to about 1700 nm.

23. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the excitation beam comprises visible light.

24. (Currently amended) The method as claimed in **any** one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the excitation beam comprises UV radiation.

25. (Currently amended) A method for use in **[[**an**]]** **a quantitative** analysis of a turbid sample comprising directing an excitation radiation beam onto the sample and measuring the intensity of emitted radiation from the thus radiated sample as a function of both wavelength of the emitted radiation and photon propagation time through the sample **to establish quantitative analytical parameters of the sample**.

26. (Previously presented) An apparatus for use in quantitative analysis of a turbid pharmaceutical sample, comprising:

a) means for generating an excitation beam of radiation;

b) means for positioning a turbid pharmaceutical sample,

c) means for focusing the excitation beam onto the sample;

d) means for detecting the intensity of emitted radiation **comprising transmitted radiation and reflected radiation** from the sample as a function of both the wavelength of the emitted radiation and the photon propagation time through the sample.

27. (Previously presented) The apparatus as claimed in claim 26, wherein the means for detecting comprises a time-resolved detection unit.

28. (Previously presented) The apparatus as claimed in claim 27, wherein the time-resolved detection unit comprises a streak camera.

29. (Previously presented) The apparatus as claimed in claim 26, wherein the means for detecting comprises a phase-resolved detection unit.

30. (Previously presented) The apparatus as claimed in claim 26, wherein the means for detecting comprises a time-gated system.

31. (Currently amended) The apparatus as claimed in any **one** of claims 26-30, further comprising means for performing a spatial-resolved detection of the intensity of the emitted radiation.

32. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the turbid pharmaceutical sample is a solid sample.

33. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the turbid pharmaceutical sample is a dispersion.

34. (Previously presented) The apparatus as claimed in claim 26, wherein the excitation beam comprises infrared radiation.

35. (Previously presented) The apparatus as claimed in claim 34, wherein the infrared radiation is near infrared radiation (NIR).

36. (Previously presented) The apparatus as claimed in claim 26, wherein the radiation has a frequency in the range corresponding to wavelengths from about 700 to about 1700 nm.

37. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the excitation beam comprises visible light.

38. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the excitation beam comprises UV radiation.

39. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the means for generating the excitation beam comprises one or more diode lasers.

40. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the means for generating the excitation beam comprises an intensity modulated lamp.

41. (Currently amended) The method as claimed in any one of claims **1 or 5-10** **[[**1-10,**]]**, wherein the turbid pharmaceutical sample is a tablet, a capsule, a bulk powder, or a pharmaceutical dose.

42. (Previously presented) The method as claimed in claim 15, wherein the step of irradiating the sample with the excitation beam comprises the step of irradiating oppositely directed surfaces.

43. (Previously presented) The method as claimed in claim 21, wherein the radiation has a frequency in the range corresponding to wavelengths from about 700 nm to about 1300 nm.

44. (Previously presented) The apparatus as claimed in any one of claims 26-30, wherein the turbid pharmaceutical sample is a tablet, a capsule, a bulk powder, or a pharmaceutical dose.

45. (Previously presented) The apparatus as claimed in claim 26, wherein the radiation has a frequency in the range corresponding to wavelengths from about 700 nm to about 1300 nm.